derivation of Latin words. A little study will give one enough knowledge of the language for ordinary practical purposes. A large number of scientific terms are derived from the Greek, some knowledge of which is indispensable to the naturalist.

Mr. George B. Emerson, in an article on the Study of Latin Grammar, published in the Massachusetts Teacher, April, 1867, says that "D'Arcy W. Thompson, a man of genius, now Professor of Greek in Queen's College, Belfast, Ireland, author of the 'Day Dreams of a Schoolmaster,' will engage to put all the Latin Grammar necessary to make a good scholar of a boy, into twenty-four pages of a little work that shall sell for sixpence."

Read also the Inaugural Address, delivered at the University of St. Andrews, Feb. 1, 1867, by John Stuart Mill (published in Littell's Living Age, Boston, No. 1,189). This treats in a very comprehensive way of the study of science and the classics. It should be read by every naturalist.

We shall issue a title-page and full index at the close of each volume of the *Naturalist*.

G. W. P., New York. — The insect you enclose is a False-Scorpion (*Chelifer*). The large claws are adapted for seizing their prey, as the habits of the insect are somewhat like those of the Scorpion, though from its different structure it is more closely allied to the Mites.

NATURAL HISTORY CALENDAR.

The Insects of June. — In our monthly calendars we propose to notice more fully than heretofore the *injurious* insects. References to the times of their appearance must be necessarily vague, and apply only, in a very general way, to the Northern States. Insects appear in Texas about six weeks earlier than in Virginia, in the Middle States six weeks earlier than in northern New England and the North-western States, and in New England about six weeks earlier than in Labrador. The time of the appearance of insects corresponds to the time of the flowering or leafing out of certain trees and herbs; for instance, the larvæ of the American Tent Caterpillar, and of the Canker-worm, hatch just as the apple-tree begins to leaf out; a little later, the Plant-lice appear, to feast on the tender leaves, and when, during the first week in June, our forests and orchards are fully leaved out, hosts of insects are marshalled to ravage and devour their foliage.

1st to 15th. — Early in the month the Parsnip Butterfly (*Papilio Asterias*) may be seen flying over beds of parsnips, laying its eggs for

the brood of caterpillars which appear in August. At the time of the flowering of the raspberry and blackberry, the young larvæ of *Vanessa Antiopha*, one of our most abundant butterflies, may be found living socially on the leaves of the willow; while the mature larva of another much smaller butterfly, the little Copper Skipper (*Chrysophanus Americanus*), so abundant at this time, may sometimes be found on the clover. It is a short, oval, greenish worm, with very short legs. The dun-colored Skippers (*Hesperia*) abound towards the middle of the month, darting over the flowers of the blueberry and blackberry, in sunny openings in the forests.

The family of Hawk Moths (*Sphinges*) now appear in greater abundance, hovering at twilight over flower-beds, and, during this time, deposit their eggs on the leaves of various fruit-trees. The American Tent Caterpillar makes its cocoon, and assumes the pupa state. The caterpillar passes several days within the cocoon, in what may be called the semi-pupa state, during which period the chrysalis skin is forming beneath the contracted and loosened larva skin. We once experimented on a larva which had just completed its cocoon, to learn how much silk it could produce. On removing its cocoon, it made another of the same thickness; but on destroying this second one, it spun a third but frail web, scarcely concealing its form. A minute Ichneumon parasite, allied to *Platygaster*, lays its eggs within those of this moth, as we once detected one under a bunch of eggs, and afterwards reared a few from the same lot of eggs. A still more minute egg-parasite we have seen ovipositing in the early spring, in the eggs of the Canker-worm. It has been described and figured in Harris' "Treatise on Insects," third edition, p. 471.

Among that beautiful family of Moths, the *Phalænidæ*, comprising the Geometers, Loopers, or Span-worms, are two formidable foes to fruit-growers. The habits of the Canker-worm should be well known. With proper care and well-directed energy we believe their attacks can be in a great measure prevented. The English Sparrow, Doves, and other insectivorous birds, such as are noticed elsewhere in our pages, should be domesticated in order to reduce the number of these pests. More care than has yet been taken should be devoted to destroying the eggs laid in the autumn, and also the wingless females, as they crawl up the trees in the spring and fall to lay their eggs. The evil is usually done before the farmer is well aware that the calamity has fallen upon him. As soon as, and even before the trees have fairly leaved out, they should be visited morning, noon, and night, shaken*

* Read in the "Practical Entomologist" for April, 1867, an account by the Editor, of the Curculio-catcher, and the true method of shaking or jarring trees. This paper is indispensable to the agriculturist. Published by the American Entomological Society at Philadelphia.

and thoroughly examined and cleared of the caterpillars. By well-concerted action among agriculturists, who should form a Board of Destruction, numbering every man, woman, and child on the farm, this fearful scourge may be abated by the simplest means, as the cholera or any epidemic disease can in a great measure be averted by taking proper sanitary precautions. The Canker-worms hatch out during the early part of May, from eggs laid in the fall and spring, on the branches of various fruit-trees. Just as the buds unfold, the young caterpillars make little holes through the tender leaves, eating the pulpy portions, not touching the veins and midribs. When four weeks old they creep to the ground, or let themselves down by spinning a silken thread, and burrow from two to six inches in the soil, where they change to chrysalids in a day or two, and in this state live till late in the fall, or until the early spring, when they assume the imago or moth form. The sexes then unite, and the eggs are deposited for the next generation.

The Canker-worm is widely distributed, though its ravages used to be confined mostly to the immediate vicinity of Boston. We have seen specimens of the moth from New Hampshire, and Norway, Maine, and Michigan. Last October, late in the month, and in November, we observed numbers of them at the White Mountains flying at twilight.

The *Abraxas? ribearia* of Fitch, the well-known Currant-worm, defoliates whole rows of currant-bushes. This pretty caterpillar may be easily known by its body being of a deep golden color, spotted with black. The bushes should be visited morning, noon, and night, and thoroughly shaken (killing the caterpillars) and sprinkled with ashes.

Among multitudes of beetles (*Coleoptera*) injurious to the crops, are the June Bug, *Lachnosterna fusca* (Fig. 1, from Harris), whose larva, a large white grub, is injurious to the roots of grass and to strawberry vines. The Rose-bug appears about the time of the blossoming of the rose. The Fire-flies now show their light during mild evenings, and on hot sultry days the shrill rasping song of the male Cicida, for they "all have voiceless wives," cuts the air. The Chinch-bug, that fell destroyer of our wheat crops appears, according to Harris, in the middle of the month, and "may be seen in their various stages of growth on all kinds of grain, on corn and herds-grass during the whole summer." So widely spread is this insect at present, that we have even detected it in August on the summit of Mount Washington.

Fig. 1.

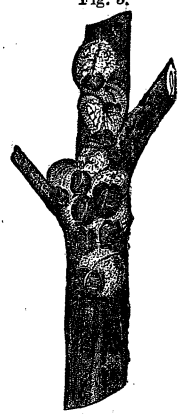
The Diptera, or two-winged flies, contain hosts of noxious insects, such as the various *Cecidomyians*, or two-winged Gall-flies, which now

sting the culms of the wheat and grasses, and various grains, and leaves of trees, producing gall-like excrescences, of varying form. Legions of these delicate minute flies fill the air at twilight, hovering over wheat-fields and shrubbery. A strong north-west wind, at such times, is of incalculable value to the farmer. Moreover, minute flies, allied to the house-fly, such as *Tephritis*, *Oscinis*, etc., now attack the young cereals, doing immense injury to grain.

Millions of Aphides, or Plant-lice (Fig. 2), now infest our shade and fruit-trees, crowding every green leaf, into which they insert their tiny beaks, sucking in the sap, causing the leaves to curl up and wither. They also attack the stems and even the roots of plants, though these latter (*Pemphigus*) differ generically from the true Plant-lice. Fruit-trees should be again washed and rubbed to kill off the young Bark-lice, of which the common apple Bark-louse (*Aspidiotus conchiformis*), whose oyster-shaped scales may be found in myriads on neglected trees, is a too familiar example. Another pest of apple-trees is the woolly Blight (*Eriosoma lanigera*). These insects secrete from the surface of the body a downy, cottony substance which conceals the animal, and when they are, as usual, grouped together on the trees, look like patches of mould. We figure (Fig. 3) from Harris, the *Coccus adonidum* found on the peach. The natural-insect enemies of the Plant-lice now abound; such are the Lady-bugs (*Coccinella*); the larva of the Syrphus-fly, which devours immense quantities, and the larva of the Golden-eyed, Lace-winged fly (*Chrysopa*).

Fig. 2.

Fig. 3.



15th to 30th.—The last days of June are literally the heyday and jubilee of insect life. The entomological world holds high carnival, though in this country they are, perhaps, more given to mass-meetings and caucuses. The earth, the air, and the water teem with insect-life. The insects of mid-summer now appear. Among the butterflies, the Wood-satyrus (*Neonympha eurythris*) skips in its low flight through the pines. The larva of *Grapta Progne* appears on the currants, while the Currant-borer moth (*Trochilium tipuliforme*) darts about the leaves on hot sunny days. The larva of *Cynthia cardui* may be found on the hollyhocks; the pupa state lasts twelve days, the butterfly appearing in the middle or last of July. The *Hyphantria textor* now lays its smooth, spherical eggs on broad patches on the under side of the leaves of the apple, which the caterpillar will ravage in August; and its ally, the *Halesidota*

caryæ we have found ovipositing the last week in the month on the leaves of the butternut. The Squash-bug, *Coreus* (Gonocerus) *tristis*, is now very abundant, gathering about the roots of the Squash vines, often in immense numbers, blackening the stems with their dark, blackish-brown bodies. This insect is easily distinguished from the yellow striped Squash-beetle mentioned in our last number, by its much greater size, and its entirely different structure and habits. It is a true bug (*Hemipter*, of which the bed-bug is an example), piercing the leaves and stalks, and drawing out the sap with its long sucker.

A. S. P.

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

Essex Institute. *Salem, Feb.* 18, 1867.—Mr. N. E. Atwood, of Provincetown, presented some observations on the different species of whales, and alluded to their food. The Sperm Whale feeds principally upon the Squid, or Cuttle-fish. The favorite food of the Right Whale consists of small crustaceans, medusæ, etc. The Finbacks feed on menhaden, and other small fishes. He then spoke of the relative size of the sexes. The males of the Sperm Whale have yielded as largely as one hundred and forty barrels of oil, whereas the females only yielded from fifteen to twenty barrels. Among the Humpbacks, the females exceed the males in size.

Mr. E. Bicknell made a few remarks upon the microscopic structure of whalebone, stating that, in his opinion, in addition to serving as a strainer to catch the food of the whale, the fringe of hairs, with which each blade is furnished on its inner edge, serves as an organ of touch, notifying it of the presence of its food. This theory is based upon the fact of the hairs being but the termination of a series of tubes, which are continuous from their base to their termination in free ends, and which are filled with a vascular pulp, which he had no doubt contained a nervous substance. The examination of pieces of fresh whalebone would be sufficient to decide the question.

Academy of Natural Sciences. *Philadelphia, March* 12.—Prof. E. D. Cope exhibited a specimen of the skull of a large turtle in a matrix of soft granular limestone, from the cretaceous marl at Barnesboro, Camden County, New Jersey. It was of great interest, not only from the rarity of fossil Chelonian crania in our collections, but from its peculiar structural features. Prof. Ennis remarked on the "Physical Condition and Habits of the Gipsies."